Volume 35 January, 1949 *Number 1*

EAST ENGINEERING
LIBRARY

JAN 13 1949

Lubrication

A Technical Publication Devoted to the Selection and Use of Lubricants

Eng
TJ
1075
.A2
1932
v.35

THIS ISSUE

STORAGE AND
HANDLING
OF LUBRICANTS

PUBLISHED BY
THE TEXAS COMPANY
TEXACO PETROLEUM PRODUCTS

HANDLED WITH CARE

That's why Texaco Marfak gives better, longer lasting protection . . . why *more than 300 million pounds of Marfak have been sold!*

THE high quality of *Texaco Marfak* is uniform in every drum, because no deviation from its successful formula is ever permitted. The most modern machines, the most precise scientific controls, and the unceasing vigilance of experienced technicians guard every step of its manufacture.

In packaging and transportation, too, the same watchful care protects the quality of *Texaco Marfak*. The result is better chassis lubrication for your car . . . and smooth, cushiony riding that lasts for a thousand miles or more.

Drive in today and get *Marfak* chassis lubrication from your Texaco Dealer — the best friend your car ever had. The Texas Company, 135 East 42nd Street, New York 17, New York.

TEXACO REG. T.M.

TEXACO MARFAK

LUBRICATION

A TECHNICAL PUBLICATION DEVOTED TO THE SELECTION AND USE OF LUBRICANTS

Published by
The Texas Company, 135 East 42nd Street, New York 17, N. Y.
Copyright 1949 by The Texas Company

Vol. XXXV January, 1949 No. 1

Change of Address: In reporting change of address kindly give both old and new addresses.
"The contents of 'LUBRICATION' are copyrighted and cannot be reprinted by other publications without written approval and then only provided the article is quoted exactly and credit given to THE TEXAS COMPANY."

Storage and Handling of Lubricants

WHERE effective lubrication begins depends upon the point of view. To the Purchasing Agent who may dote on specifications it may begin at the oil refinery. To the plant operator it begins at the machine. To the lubrication engineer it starts from the time the lubricant is delivered to the customer. Obviously, all should be concerned with maintaining the original purity of any lubricant as far as possible during its period of service; for modern lubricants receive virtually the same care as do foodstuffs when they are refined, compounded and packaged. The petroleum industry is proud of this record for purity. The fact that some steam turbines have run for many years on the original charge of turbine oil (with only the addition of make-up oil) is evidence of what can be done when plant management, the operators and the petroleum industry cooperate in keeping a lubricant free from contamination and capable of doing its best work. Another example is the pre-packed ball bearing — lubricated with scarcely more than an ounce of grease, yet capable of running for many years without renewal of lubricant.

All this leads up to a problem which is vital in practically every industry today, i. e., how to store and handle lubricants so they will be free from contamination. It is definitely a problem in any industry where a lot of dust and dirt is prevalent in the air or around the machinery. When the latter was crude, slow-moving, driven by open gearing, with plain bearings perhaps designed for waste-pad lubrication, it did not matter very much whether or not the lubricants contained a little dirt. Those days sponsored a lot of bad habits among many plant operators. Open grease barrels, dirty paddles, half-filled oil measures, dirty waste and a sloppy floor were accepted as necessary evils of the lubrication chore.

The design of higher speed production machinery, the more prevalent usage of precision anti-friction bearings and enclosed speed-reduction gearing of various types, all contributed to plant people giving more thought and care to the storage and handling of their lubricants. This attitude was encouraged by lubrication engineers who cooperated not only in recommending the most suitable lubricants but also in planning oil storage locations and distribution facilities.

THE PROBLEM HAS SEVERAL ANGLES

The storage and handling of lubricants involves a number of factors which require consideration; for example:

1. How the oil house or oil room is built and laid out.
2. The storage tanks and their accessory equipment such as heating coils, etc., especially when solid or semi-solid lubricants are used.
3. How shipping containers are handled and the equipment involved.
4. The provisions for measuring so that suitable records can be kept.
5. The manner in which lubricants are distributed to the various units or departments in the plant.
6. Management procedure in recording lubrication data.

STORAGE FACILITIES

Any concern which uses a considerable volume of lubricants should provide for a central oil storage house, or at least set apart a special room in some part of the plant from which lubricating oils and greases can be issued to the various departments as needed, and in suitable though not excessive quantities. In turn all new supplies of such oils should be delivered here for storage until required.

Whether or not any plant will be justified in going to the expense of constructing an independent oil house will depend to a great extent upon the amount of equipment involved which requires lubrication. Naturally, there will be considerable expense attached to such an installation. For this reason, therefore, many plants which are adjacent to oil supply depots frequently set aside a corner of the engine room or storehouse for the storage of lubricants, and keep these latter in the shipping containers until they are empty, when they are forthwith returned to the oil dealer.

Storage of this type is not entirely satisfactory if there is any possibility of contamination of the lubricants. Such localities are often very carelessly hosed or cleaned out, with the result that dirt will sometimes be swept into the drip pans and measures. There will also be considerable chance for leakage and wasting of oils in such a room, unless an unusually careful employe has sole and complete charge and keeps it locked and inaccessible to other employes.

Construction Features

Where an oil house is warranted or an oil room is set aside, it should, whenever possible, be of fireproof construction throughout, with brick, tile or concrete walls and floor, and a tile, metal or slate roof or ceiling built on steel beams or rafters. The floor should be fitted with drains.

The danger of fire in a modern oil storage house will usually be practically negligible; yet constructional features of fireproof nature are the best sort of insurance and fully justified. In addition, cleanliness will be more easily maintained in such a building or room than in one where woodwork is used, which can so easily become splashed and oil-soaked.

The basement arrangement is very important whenever bulk oil storage tanks are located below the floor level. Too often the main floor facilities for handling lubricants will be up-to-date and an excellent system of accounting followed, yet the basement can become a catch-all for junk, spare parts and oil drippings. Obviously, this would defeat the purpose, at least as far as fire hazard is concerned.

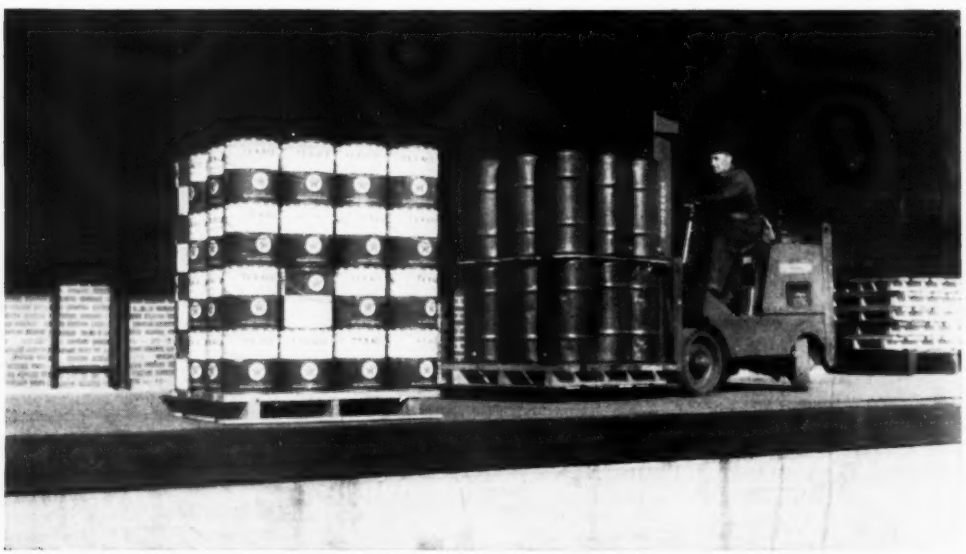


Figure 1—The pallet truck is an invaluable adjunct to quick handling of petroleum containers with the least chance of damage thereto.

Doors and windows are another factor requiring consideration in oil house construction. Best practice recommends as few of these as possible, and those that are needed should be of steel frame or roller type, fitted with wire glass and automatic closing devices. Suitable fire extinguishing equipment should also be installed.

Figure 2—The pallet truck is also a factor in quick loading of lubricant drums into trucks for final conveying to their point of usage.

Proximity to Point of Delivery

Considerable thought should be given to the location of the oil house or the part of the storehouse or power house which is to be set aside for conversion into an oil room. An appreciable amount of time will always be lost in the laborious handling of heavy oil containers. Damage both to lubricants and containers may also occur if the latter are rolled or tumbled about unnecessarily. So, the oil room or house should be located as close as possible to the railroad siding, dock or street. Then the containers will not be subject to any more handling than absolutely necessary in their transference from cars, boat or truck to the point of storage.

When barrels or drums must be handled from one level to another, hoisting equipment also must be considered. Hoisting is expensive, but more to the point, it may involve a certain amount of severe handling of the containers which may lead to leakage or contamination of the oils or greases if bungs

Figure 3—A good example of steel door construction showing manner of raising and lowering. Note also steel windows and other fireproof features of the storage building.

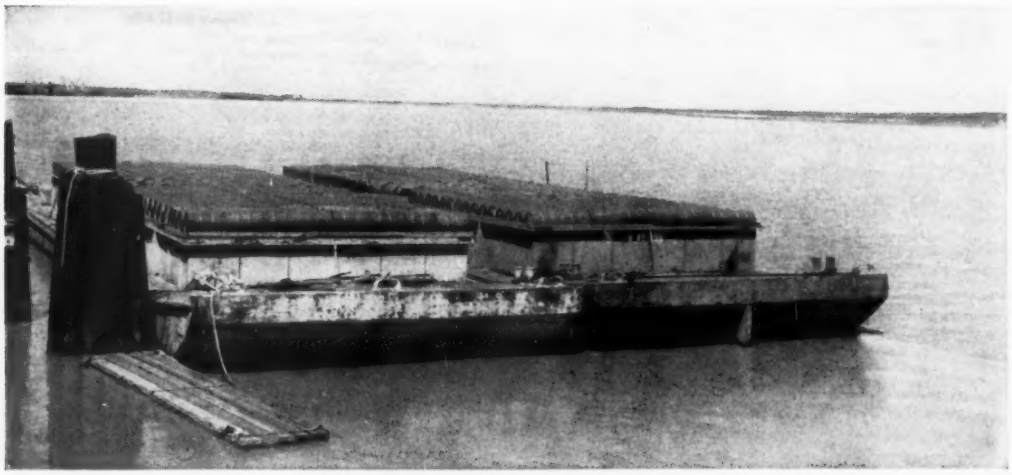


Figure 4—Lubricants for shipment stored on hangers prior to final loading. Note all are laid on their sides.

are jarred loose. Wood barrels are not very widely used today but when they are involved they must be given special handling to prevent warped and cracked heads, or the jarring loose of particles of glue lining. Obviously, any damage to a lubricant container which may break the seal and lead to contamination of the contents through entry of water or foreign substances, is a serious matter.

This is why "one level" handling is favored with the platform of the oil house or storage room as nearly as possible on the same level as the car floors, dock or truck body. Then containers can be rolled, trundled on hand trucks, or handled by a portable conveyor, directly from the delivering medium to the filling hatches of any basement storage tanks, or to the hoisting device above the tanks if they extend above the floor. This assures a minimum of labor, hazard, time lost, damage to containers, and waste or contamination of the lubricants.

Bulk Storage Tanks

In any plant the type, number and size of storage tanks that may be required will depend upon the volume and nature of the lubricants that are to be stored. Where an oil house is involved it will often have been built with a basement, where the bulk storage tanks are located. The main floor in such a house thus serves as the receiving and delivering room, the tops of the tanks projecting above the floor or not, according to the type of house. In this way, it is possible to keep all tankage below the floor level, and have this entire area for delivery pumps and other necessary accessories.

The number of such tanks will naturally depend upon the number of different grades of lubricants that the plant will require. In every case, the rate of plant consumption involved should be considered. Where only small quantities of certain products are to be stored for any length of time they are usually kept in the shipping containers over the period of storage.

Installation Procedure

Horizontal location of all larger tanks will always be advisable, in order to obtain maximum distribution of the load on the foundations and reduce the load per unit of area as much as possible. In this way, the possibility of settling will be decreased, and excessively heavy footings and foundations will not be as necessary to carry a load which is relatively widely distributed, provided the ground on which they are to be built is solid and not prone to settle. To insure complete rigidity, the tanks should always be securely anchored to their foundations,—never just rested upon the latter. This will be especially essential in localities where floods, earth movements or explosions, etc., are possibilities, the occurrence of which might disturb the location of tanks and cause broken pipe connections, leaks, loss of oil and damage to floors.

Delivery of Lubricants

Fluid lubricants are delivered in bulk by tank car or boat or in packages such as steel drums and cans.

Solid or semi-fluid products such as greases, gear lubricants, etc. are packaged at the refinery and delivered in drums or cans.

Where bulk delivery is involved, the location of the tanks with respect to the delivery level is important. Usually in such plants the lubricant is transferred from the tank car or boat through a hose connection. The same hose should never be

Figure 5—The drums are stored on their sides. This is alright, but to lay them on the ground is all wrong.

used for delivery of fuel oils, black oils, etc. as for lighter lubricants, or kerosines, due to the possibility of serious contamination of more highly refined oils occurring.

Gravity flow should be taken advantage of by locating the tank filling hatch below the level of the outlet valve of the tank car or truck. Where boat delivery is involved, this simple procedure is not so easily followed and the oil must be pumped from the ship's tanks to the oil house.

Where several grades of oils are to be handled by pumping to a number of tanks, care should be taken in the location and operation of valves, to avoid drawing the wrong grade of oil into the suction line to contaminate a more highly refined product. Interconnecting valves should be tightly closed before pumping is begun.

Temperature Control

Lubricants can be handled most effectively when oil house and tank temperatures are controlled. Therefore, heating provisions should be studied when planning storage tank location in either an oil house or an oil room. Where basement or subsurface location is planned for an entire tank or at least the major part of it, means for heating will be very helpful especially in Northern or Western localities even though that portion below the floor

Figure 6—An out-doors "chamber of horrors", showing the wrong way to store drums of lubricants.

or ground level will not be subjected to as great a variation in temperature especially if the building is of relatively solid construction. In some installations the temperature can be so easily controlled that it will be often possible to close the basement sufficiently by means of sealed trap doors, etc. and maintain the entire room at the requisite temperature for pumping even the heavier oils that must be handled and still keep the delivery or pumping room above, cool and comfortable.

Wide temperature fluctuations may lead to "sweating" and condensation of moisture within tanks. Oils intended for circulating systems can be seriously contaminated by the entry of water in this manner. Every precaution must be taken, therefore, to maintain as uniform temperature as possible.

Location of Heating Coils

Where climatic temperatures may vary over a wide range and heavy, viscous products such as valve and cylinder oils, greases, or heavy gear oils, etc. are to be stored the oil house or oil room should be equipped with steam heating coils. Some types of storage tanks for lubricants also may be built similar to fuel oil tanks, with heating coils within. In such installations the coil should always be composed of bent pipe, and no pipe junctions or fittings should be present within the tanks, owing to the danger of water, or boiler compounds contaminating the lubricants in event of steam leaks at pipe joints, etc.

It is better, however, to install steam heating coils in the storage room itself or surrounding the tanks. Thus temperatures can be accurately regulated, overheating will not be so apt to cause damage to certain products, and heating can be economically carried out by the use of exhaust steam. Where heating with live steam, the inlet valve should be "cracked" and the outlet valve wide open to prevent overheating and "cooking" of the oil.

HANDLING EQUIPMENT

The accessory equipment required in an oil house or oil room will include pumps, meters or other measuring devices and portable elevators for hoisting or lowering drums. For the handling of fluid lubricants out of any form of storage tank sealed pumps should be used wherever practicable. In many cases pumps for this purpose are built to meter or measure automatically the amount of oil withdrawn. A measuring device of some sort is advisable to enable keeping of lubricating oil records so that the oil consumption of the plant or any of its departments can be checked whenever desired.

Measuring pumps will save considerable time and labor, will enable the oil house or oil room attendants to fill orders promptly, insuring that the oils are kept free from contamination and in their original state of purity, at least until they are drawn into the distributing containers. The value

Figure 7—Outdoor storage of drums awaiting shipment is usual when they are properly racked on their sides.

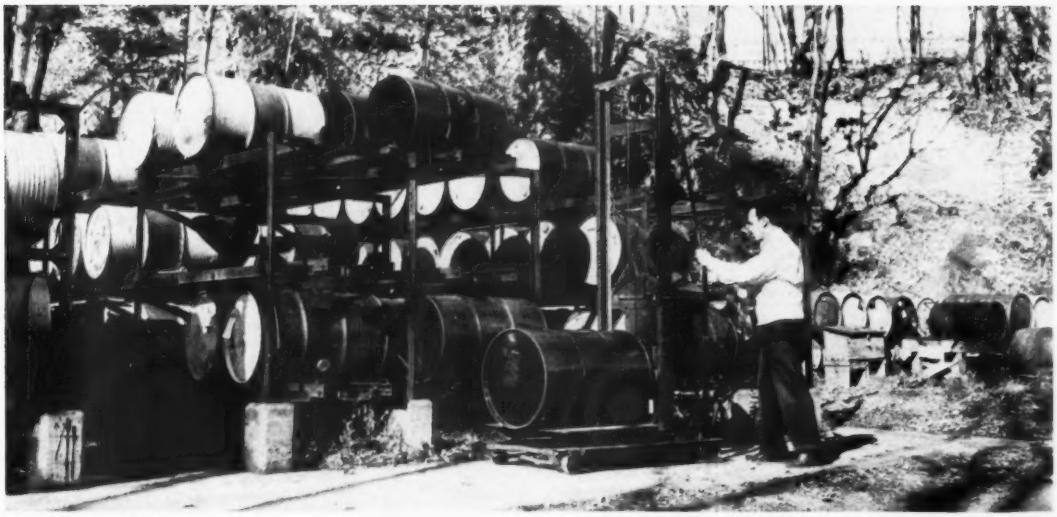


Figure 8—Out-door storage of drums of lubricants is permissible when suitable storage racks are provided, and the drums are stored on their sides. Note the lift hoist to facilitate handling.

of orderly oil house operation and properly kept records of daily, weekly and monthly oil consumption is obvious. The effect on the morale of the plant and the economies in consumption of lubricants that can be attained, will be surprising where employes must follow a definite procedure in the obtaining of their necessary oil supplies and where an accurate record is kept of their consumption.

Hoisting Equipment, Etc.

A portable elevator or lift truck is advisable wherever drums are to be hoisted to the top of storage tanks, or to emptying racks for transference of their contents.

Another feature is a suitable track extending along the tops of all tanks which are to be filled from drums, at a sufficient height above the tank tops to facilitate location of the bungs directly over the filling hatches and reduce the possibility of waste. Containers can then be hoisted to this track level, rolled into position above the respective tanks to be filled, and emptied of their contents rapidly, completely and with very little labor.

DISTRIBUTION OF LUBRICANTS

The manner of distribution will depend upon the location and number of units that are to be served. Where a number of buildings and departments are involved it will often be practicable and most economical to make deliveries of oils and

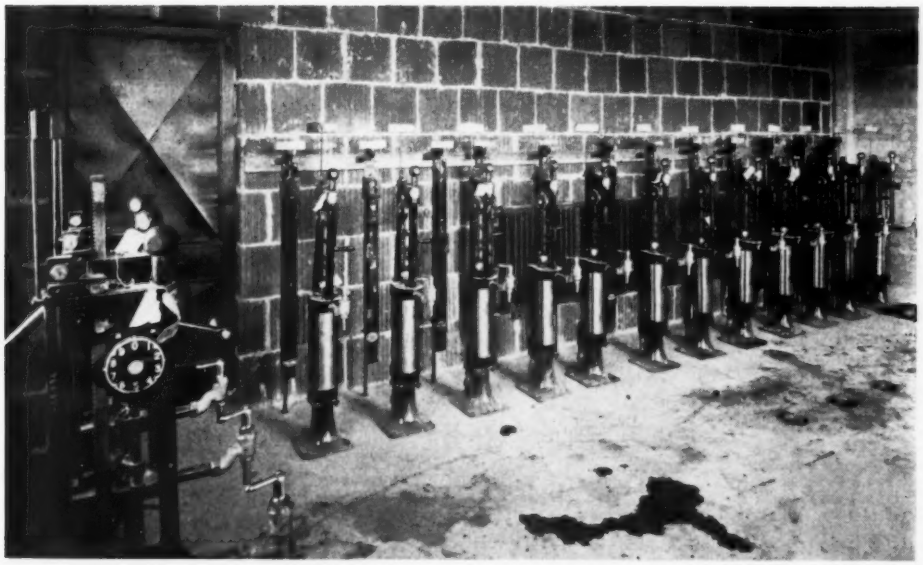
Figure 9—Showing how it shouldn't be done. Don't smoke around any petroleum product. Nor, should storage drums be so close to the fire extinguishing equipment.

Courtesy of Bowser, Inc.

Figure 10—In contrast with Fig. 11 showing poor housekeeping in an oil room—a possible source of fire hazard as well as unsafe for the personnel.

Figure 11—Interior of a well kept oil house showing oil tanks and pumps and grease package rack.

Courtesy of Bowser, Inc.



Courtesy of Bowser, Inc.

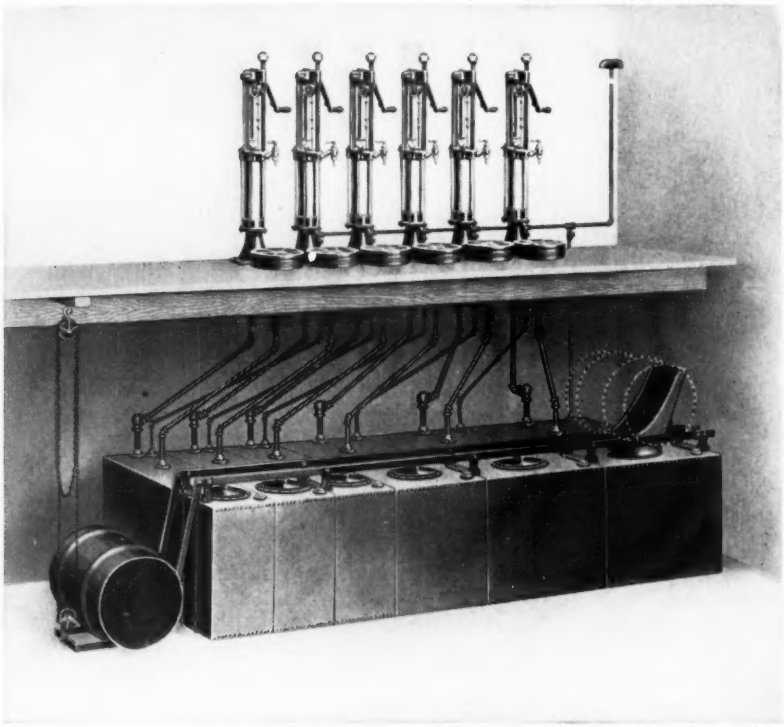
Figure 12—The building construction is fine, the pumps alright, but lack of drip pans and a dirty floor is not in line with good housekeeping. Contrast this with Fig. 13.

greases by motor truck, covering perhaps the entire plant at one trip. Other plants which involve but one or two buildings can probably be served by hand truck delivery. In any case it will often be found advisable to supply individual departments with approximately fifty gallons of oil, or fully charged grease guns at a time in order to reduce oil house labor, and facilitate recording.

Where gravity, or circulation oil lubricating systems, or centralized pressure grease systems are involved, which require addition of new lubricant at more or less infrequent intervals, the necessity of keeping an extensive auxiliary supply of oil on hand in individual tanks adjacent to the machine is practically eliminated. In such cases, failure in the lubricating system will usually require prompt shut-

Courtesy of Bowser, Inc.

Figure 13—Floor layout of a well-kept oil room showing battery floor level pumps which take lubricants from tankage in the basement.



Courtesy of Bowser, Inc.

Figure 14—A battery of Bowser oil storage equipment showing pumps, tanks and connections, barrel track and lift, chain hoist, drains and vent pipe.

down in any event. Reciprocating engines, or compressors on the other hand, running with splash lubrication can be frequently kept in operation while any minor deficiencies in their lubricating systems are being repaired.

In any case, the capacity of the lubricating system should be ample to take care of peak loads involving either power or production. At the same time the oil tanks in a circulating system should be large enough to allow the oil sufficient time to rest. It is false economy to purchase a system of too small capacity, simply because it is cheaper, for the oil will circulate so rapidly that it is not afforded a sufficient "rest period." Foreign matter is therefore unable to settle out properly, the oil will not have time to cool, the purifiers and filters may become clogged, emulsions may occur, and lubrication difficulties may consequently arise, and the life of the oil materially shortened, requiring premature replacement.

Unit Storage

Where auxiliary storage of oils in individual departments is to be maintained the type of containers used is important. Some prefer the cabinet type of storage tank, fitted with a suitable hinged cover to afford the utmost protection of the contents. Usually such tanks are equipped with measuring pumps, and so built that any drip from the pump discharge drains right back into the tank.

STORAGE OF ADDITIVE TYPE LUBRICANTS

On the other hand, it may be desirable to store in the shipping drum itself, using a hand pump for removal of the contents when needed. This means that oil drums must be set up on end. The procedure is perfectly satisfactory provided there is no chance of water getting into the lubricant, especially if it contains an additive. Straight mineral oils are not adversely affected by a little moisture -- they may become cloudy, but after standing for a few days they clear up as the moisture settles to the bottom.

Moisture, however, is a serious contaminant when an oil contains additives, most of which are water sensitive. Contact with water may remove some types of inhibitors, and also affect their stability. If, therefore, a turbine or hydraulic oil, or an additive motor oil, or preservative oil, is to be stored in the shipping drum, with the drum standing on end to enable removal of the contents by pump or ladle, *extra precautions* must be taken to see that no moisture accumulates on the head of the drum, or can be splashed or sprayed into it. A good tight bung and seal on a drum is excellent assurance

that this won't occur; a tight oil pump fitting in the bung hole of an oil drum helps protect this type of lubricant. Above all, *don't* store additive type lubricants any place where they can be exposed to moisture either from rain, hosing or drip. Keep drums on their side until the contents are to be used. Keep them under cover, preferably indoors, because even the best of closures do not guarantee freedom from water contamination if a drum stands "heads-up" with water on top.

The same precautions must be observed in the storage of grease drums and containers. Water will cause separation, lump formation, cloudiness, when allowed to contaminate certain greases. Drum and package closures are seldom a guarantee here either that water will not seep through to the product if allowed to stand on top. Good preventive maintenance calls for storage with bungs or closures on the side when outdoors or where water may reach the package; and for storage indoors only and protected whenever the package is open or in use.

Remember also, even the best of bungs or gaskets are ineffectual if improperly tightened, once a drum or package has been opened. A good seal is obtained only if the bung or drum fixture is made tight; to do this one should use the correct type of bung wrench and not just any type of tool to obtain a closure. Cap seals, also, can only be applied with proper equipment supplied by the maker of the seal, and these seals can be effective in shutting out moisture only if the bung beneath has been properly tightened.

STORAGE OF GREASES AND GEAR LUBRICANTS

Greases, gear lubricants and petrolatums are customarily shipped in metal drums of 400 or 100 pounds capacity or in 35, 10, 5 or 1 pound pails or cans. It is good practice to store only a slight excess of the amount needed and to observe every caution to avoid overheating. The oil and soap constituents of certain greases will tend to separate more or less permanently if subjected to abnormal heat. Obviously the subsequent lubricating value of such grease will then be affected.

Where drum shipments of semi-solid lubricants are involved in any considerable number, provision for central storage of the products may be desirable. When straight mineral gear lubricants or petrolatums can be rendered fluid through reasonable heating it is possible to handle them like oils, their storage tanks being built with similar filling hatches rolling tracks and elevator equipment. Thus upon receipt at the plant of such materials in large amounts, the steam heat can be turned on in the oil room and drums promptly hoisted for draining of their contents into the respective tanks set aside for their storage. Accurate regulation of steam flow and

Courtesy of Bowser, Inc.

Figure 15—Showing how a set of lubricating oil dispensers can be located in Textile mill service.

oil room temperatures is necessary during this procedure.

Petrolatums or gear lubricants for exposed gears which are too heavy to flow with any degree of rapidity under reasonable heating, must be stored in the shipping containers. In general they can best be handled like greases, by a clean paddle or spoon, removing only a sufficient amount to fill the lubricators, each time. Brick type greases such as certain railway lubricants for driving journal or rod lubrication are usually already cut or formed in the requisite sizes when shipped, and for other applications may be shaped with a knife or wire; such products are entirely too hard to dig into with a paddle or spoon.

To protect the contents of the grease drums from dirt and water after the head has been removed, and to prevent drying out of the contents, a removable metal cover should be kept tightly in place over the top.

THE RESPONSIBILITY OF THE MANAGEMENT

The greatest economy and efficiency in the storage, handling and usage of lubricants is attained when supervised by a capable lubrication engineer. More and more companies are creating such a position in their mechanical or engineering departments realizing that an able, technical specialist can save his salary many times over by reducing waste of lubricants, loss of time, and cost of upkeep of machinery. Such an engineer should, as part of his responsibility, have direct charge of all storage and dispensing facilities and should, where necessary, be furnished with capable assistants in order that prompt deliveries and accurate records can be maintained. All lubricants should be issued on requisition only, signed by the foreman in charge of each department, and should never be issued in excessive quantities, since this has been found conducive to waste in application.

Monthly oil records are of decided value and should be prepared by the lubricating staff and submitted regularly to the executives. By showing inventory of stocks on hand, and records of the amount of each lubricant used throughout the plant, abnormal usage can be checked up without delay and corrected if necessary.

DO'S

Use suitable containers to catch oil drip.

If trays or pans are clean oil can be used for secondary lubrication even without filtering.

Install reliable fire protection equipment. Test at regular intervals.

Observe a regular routine for clean-up. Machinery looks better when clean; believe it or not, it usually runs better.

Collect oil soaked cloths in covered, metal containers. Wash them for re-usage.

Keep sand from fire-protection sand boxes away from oil containers. If necessary to scatter sand on the floor, spread carefully. Sand is an excellent abrasive if it gets into a lubricating system. It can stay in suspension in heavier greases or gear lubricants.

and DON'TS

Don't let spilled or dripped oils accumulate.

Wipe up promptly.

They are a fire hazard, also easy to slip on.

Fire extinguishers are not contagious nor are they coat racks. *Don't* hide them or cover them with rags or clothes.

Don't use lint-shedding rags or wiper cloths. Lint accumulations in circulating piping or oil grooves can stop flow of lubricants.

Don't let oil soaked wiper cloths accumulate. They are an excellent fire hazard.

Don't regard sand as a substitute for a floor-cleaning job. Sand, like dust settling from the air is an excellent "sponge" for oil drip, and will develop into a dangerous hazard if allowed to accumulate.

Cleanliness even comes before godliness in the oil house or storage room. Another axiom also holds: Keep clean and live safer. The quitting whistle is always more musical than the ambulance siren.

Printed in U. S. A. by
Salley & Collins, Inc.
305 East 45th Street
New York 17, N. Y.

efficient aircraft operation ...lower maintenance costs

The wide preference for Texaco in aviation – as in all fields of transportation – is based on Texaco's record of achievement in producing the quality lubricants and fuels essential for efficient, economical engine operation.

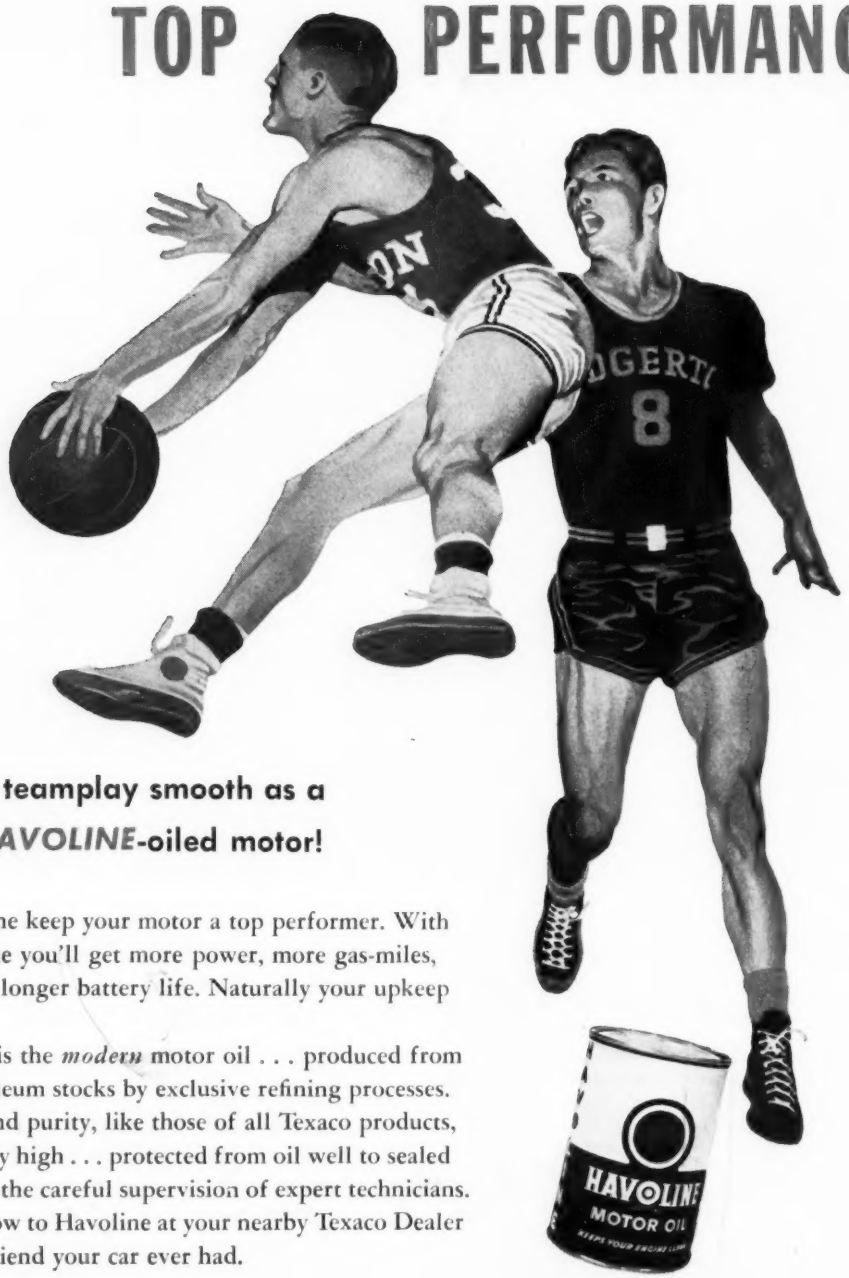
This uniformly high Texaco quality is available to you for your own personal car in such famous Texaco products as Havoline Motor Oil, Texaco Sky Chief and Fire-Chief Gasolines, Texaco Marfak chassis lubricant . . . and others.

You can get Texaco lubricants and fuels in all 48 States from your Texaco Dealer – the best friend your car ever had.

TEXACO REG. T.M.

TEXACO Lubricants, Fuels
and Lubrication Engineering Service

TOP PERFORMANCE



. . . takes teamplay smooth as a *HAVOLINE*-oiled motor!

LET Havoline keep your motor a top performer. With Havoline you'll get more power, more gas-miles, easier starts, longer battery life. Naturally your upkeep cost drops.

Havoline is the *modern* motor oil . . . produced from choice petroleum stocks by exclusive refining processes. Its quality and purity, like those of all Texaco products, are uniformly high . . . protected from oil well to sealed container by the careful supervision of expert technicians.

Change now to Havoline at your nearby Texaco Dealer — the best friend your car ever had.

THE TEXAS COMPANY • TEXACO PRODUCTS • DIVISION OFFICES

ATLANTA, GA. . . 864 W. Peachtree Street
BOSTON 17, MASS. . 20 Providence Street
BUFFALO 3, N. Y. . . 14 Lafayette Square
BUTTE, MONT. . . 220 North Alaska Street
CHICAGO 4, ILL. . 332 So. Michigan Avenue
DALLAS 2, TEX. . . 2310 So. Lamar Street
DENVER 1, COLO. . . . . 910 16th Street
HOUSTON 1, TEX. . . 720 San Jacinto Street
INDIANAPOLIS 1, IND., 3521 E. Michigan Street
LOS ANGELES 15, CAL. . 929 South Broadway
MINNEAPOLIS 2, MINN. . 300 Baker Bldg.
NEW ORLEANS 6, LA., 919 St. Charles Street
NEW YORK 17, N. Y. . 205 East 42nd Street
NORFOLK 1, VA. . Olney Rd. & Granby St
SEATTLE 11, WASH. . . 1511 Third Avenue

TEXACO

Texaco Products distributed throughout Canada by McColl-Frontenac Oil Company, Limited, MONTREAL, CANADA